

# BISSELL (W.G.)

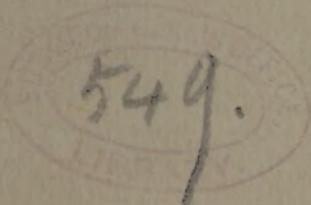
## Legislation *versus* Indiscriminate Expectoration.

BY

WILLIAM G. BISSELL, M. D.,

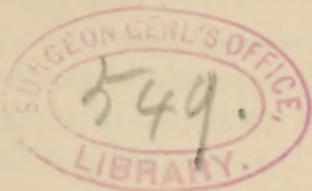
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## LEGISLATION *VERSUS* INDISCRIMINATE EXPECTORATION.\*

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IT has only been comparatively within the past few years that medical men have known the definite means by which consumption can be prevented. Scientific men the world over have worked on the subject, and fortunately the time has arrived when the laity begin to realize the possibility of lessening the amount of the disease and are seeking information as to how it can be accomplished. When Robert Koch, some thirteen years ago, claimed that he had discovered the germ of tuberculosis, he was looked upon somewhat as a theorist; but the ultimate, practical results due to that discovery will undoubtedly amount to as much toward the prevention of consumption as Jenner's vaccination has toward the elimination of small-pox.

The view that tuberculosis is an infectious disease, or rather, let us say, a communicable disease, has gradually pervaded the profession, until to-day the statement may be

\* Read before the Buffalo Society of Natural Sciences, October 25, 1895.

made that *it is* a communicable disease with little fear of controversy.

The first statement is, then, that consumption is an infectious, communicable disease.

The second statement, the one that would naturally follow, is that the specific source of this infection, the cause of the disease, is a germ, and it is this germ alone that can cause consumption.

Without the passage of this specific germ into the body, without the transmission of this particular germ in some way or another in a living condition from the sick to those open to such infection, consumption can not develop, therefore can not spread.

The disease, then, can be prevented in one way by any means which prevents the germ entering the body.

1. As to how this can be accomplished a knowledge of the germ and its nature will help answer.

The germ of consumption is different from all other germs in that its growth is very slow, requiring weeks or even months for full development. It requires a special temperature for growth—namely, between 99° and 102° F.—and also can not grow without a requisite amount of moisture.

While these points are true, it possesses a still greater peculiarity: namely, that it can live a great length of time—weeks, months, or even years—in a dried condition.

While heat and sunlight are destructive to the organism, drying has little effect, and it is at this point that a third statement may be made—that is, the germ, the source of infection of consumption, passes out from man by the sputum, and it is this dried sputum that furnishes the greatest source of danger.

Do not understand me as stating that this is the only way by which tuberculosis can be transmitted, for it is not;

but it is the most common means by which pulmonary tuberculosis, commonly known to the laity as consumption, is transmitted.

It is impossible for any germ to leave a moist surface and be carried off by currents of air, and for this reason the breath of consumptives is harmless in that it does not contain the germ.

The point is now suggested, In what way are the practical results to be accomplished? Certainly not by the use of the poison tuberculin, which at one time created such a stir and has since been so thoroughly condemned. Yes, to a certain extent by that means—that is, by the tuberculin test for the detection of tuberculosis in cattle—but furthermore by any means by which the presence of tuberculosis, of which consumption is a form, can be detected.

If the existence of consumption in a certain individual is known, and if that individual is conscientious and exercises proper precautions (which are not harassing or painstaking), there is no reason why consumption should be given to a single other person.

It is not an hereditary disease, and always must arise from some source previously infected, and it is in reference to a most common means of furnishing infected sources that I wish to lay stress to-night—that is, the vile habit of expectorating on the floors of street cars, public buildings, and similar places.

2. A short time ago the Buffalo Railway Company adopted a rule looking to the prevention of expectoration on the floors of their cars. There was placed in each car a sign reading to the effect that "Spitting on the Floor of this Car is Positively Forbidden," and the result of the display of these signs was the lessening, to a small degree, of the expectoration on the floors of the cars. The move was one in the right direction and should be highly com-

mended; but company rules of this nature are difficult to enforce without stronger legislation back of them, and some measure should be adopted to aid the company in its efforts toward better street-car sanitation.

Where is there a more common place for the spreading of such infection than the floors of street cars? The sputum becomes dried, mixed with dust, and is easily disseminated by currents of air, and is either inhaled or swallowed, and it is reasonable to suppose that several of the five hundred persons reported to the department of health as having died from consumption last year received their primary infection from this source.

During the year 1894 over 42,500,000 passengers were carried in some 2,700 cars by the Buffalo Street Railway Company, and one can appreciate by this number the very considerable amount of dried expectoration that must necessarily have been inhaled.

Take, for instance, a man returning for the first time to his place of business after having been "laid up" with a severe attack of an acute bronchitis. It is fair to suppose that owing to his still weakened condition he will resort to the street cars as a mode of transportation, and must necessarily inhale the air of the car. If this air chances to contain tubercular-infected dust, one can readily imagine the great danger to which he is exposed.

With few exceptions, very little work has been done to practically demonstrate the possibility of street-car sputum infection, calculations having been based on the fact that the tubercle bacillus is usually present in the sputum of consumptives, and undoubtedly among the number that ride on the street cars annually there are several hundred persons suffering from the disease.

This point has been demonstrated to be a fact, for during the past few months fifty-six microscopical examina-

tions have been made of selected samples from the floors of cars at the foot of Main Street, and four of these examinations revealed the presence of the germ of consumption.

I draw attention to one mount, of which I furnish a photomicrograph. The photograph shows a clump of tubercular organisms numbering in the hundreds, the sample having been collected from a Cold Spring car.

The question now arises, How can the contamination of cars by tubercular sputum be prevented? In the same manner that contamination of theatres, churches, public buildings, and similar places can be prevented, and that is principally in two ways:

*First.* By educating the public in general as to the danger of indiscriminate and careless expectoration.

*Second.* By the passing of a city ordinance prohibiting the expectorating on the floors of cars, public buildings, and similar places.

3. The medical officer of health at the present time is neither aided by public opinion nor statute in any attempts he may make to stop the propagation of consumption, and, although it is clear to the medical and scientific world that tuberculosis is an infectious or communicable, and not a hereditary, disease, before legislation could possibly be obtained on this subject it is necessary to educate the public at large.

With the object in view of educating the public as to consumption, on the 10th day of June, 1895, the Department of Health in this city mailed the following circular letter to the physicians of the city:



DEPARTMENT OF HEALTH, BUFFALO, N. Y., June 10, 1895.

DEAR DOCTOR: You are aware that tuberculosis is strictly a contagious disease, and can be prevented, providing the proper sanitary regulations be adopted. Therefore, after June 15, 1895, the Department of Health, in the interest of the public safety, demands that all cases of pulmonary tuberculosis (consumption) occurring in your practice be reported to this office, whereupon a circular of instructions will be sent to the family, or those in charge of such patients, with the object of lessening and preventing the spread of this dire complaint.

Whenever the diagnosis as to the existence of the disease is in doubt, you are most respectfully requested to submit to the bacteriological bureau of this department the sputum of such cases for a bacteriological test, which will be made free of charge. The report of this examination will be sent you by mail.

Yours most respectfully,

ERNEST WENDE, M. D., *Health Commissioner.*

The circular of instructions referred to is as follows:

DEPARTMENT OF HEALTH, BUFFALO, N. Y.—*Information for Consumptives and those Living with Them.*—Tuberculosis, commonly known under the names of consumption, decline, scrofula, wasting disease, lupus, and white swelling, is a contagious disease, which means that every new case is contracted from some other case. It is not an inherited disease, nor is it due to "a cold," as once supposed, and these facts furnish the keynote of how to prevent the disease. The cause of tuberculosis is a germ, called the *Bacillus tuberculosis*, and the disease is only produced by it. The germ is commonly found in the sputum (spit) of those having consumption, and in the pus (matter) discharged from tubercular sores of all kinds. This tubercular germ finds its way into a healthy person principally in three ways:

1. Through the lungs.
2. Through the stomach and digestive tract.
3. Through open wounds (sores).

1. *Through the Lungs.*—This is apt to occur when an ordinary pocket handkerchief is used by a tuberculous person to receive expectoration (spitting)—a filthy and dangerous habit. When such a handkerchief is opened the dried expectoration becomes pulverized and is disseminated through the air, from whence it may be inhaled by others as well as by the patient himself, who is likely to suffer from drawing the diseased germs into portions of the lung previously unaffected. Another and most common source of pulverized expectoration is derived from the disgusting habit of indiscriminate and careless spitting, as on the floors of street cars, churches, theatres, large stores, public buildings, etc., and on the ground and sidewalks. The expectoration (spit) becomes dry, mixed with dust, and in this form is carried into the air and blown around, then inhaled into the lungs or swallowed. This spitting habit is dangerous in the extreme and should not be practised.

2. *Through the Stomach, etc.*—This occurs generally by consumptives swallowing their own sputum, and by the use of spoons, cups, and other articles of the kind, which have not been properly cleansed after having been used by a tuberculous person or consumptive. Tuberculous meat, and milk from tuberculous cows are also a great source of danger, and should not under any circumstances be used.

3. *Through Open Wounds (Cuts).*—This happens by persons getting tubercular pus (matter) into an open cut or an abrasion on the skin, and is probably the least common of the three usual ways of infection.

During the past ten years Buffalo, with a population of 250,000, has had 5,166 deaths reported as from consumption.

The probabilities are that this is by no means the entire number due to that disease, as certificates are not infrequently falsified in order that relatives may obtain insurance, which they otherwise could not, were the true cause of death known.

The means of preventing the spread of consumption rests mostly with persons having the disease. If they exercise

proper precautions, which are not difficult nor exacting, they can in a great measure avoid giving the disease to others, and yet not be deprived of the society of their friends nor of any of the comforts of life.

Knowing the channels of infection, which have been stated, the necessary precautions can easily be taken.

All sputum (spit) from consumptives should be destroyed, and must not be allowed to become dry. A spitting cup, or flask, containing just enough disinfecting solution (which can be made by adding eight drops of carbolic acid to half a cup of water, or by dissolving a tablet of bichloride of mercury, such as may be procured at any drug store, in a pint of water) to cover the bottom of the vessel should be used for expectoration. When out of doors a consumptive should use a pocket spitting flask containing the disinfecting fluid. If this is impossible, a piece of old cotton cloth or water-closet paper should be used to spit into, and such cloth or paper destroyed by fire as soon as possible after using. No piece should be used for more than one expectoration.

Never spit on the floors of street cars, public buildings, stores, etc., nor on the ground or sidewalks, as such sputum becomes dried, is blown about, and furnishes the source of danger above referred to. There is little danger from the mere breath of a tubercular patient; the danger lies in the dry expectoration, which contains the contagious or infecting germ.

Kissing consumptives is a positive source of infection, and should be guarded against, especially in the case of children. Married people should not sleep together where either is infected. Sleeping in rooms occupied by tuberculous persons is a source of danger, and such rooms should not be used by other persons after having been occupied by consumptives until they have been thoroughly disinfected and all material in them put through the same course. Rooms can practically be disinfected by the use of the fumes of burning sulphur (using three pounds of sulphur to a room ten feet square, and increasing the amount according to the size of the room in proportions of three pounds to each additional thousand cubic feet of air space), the room during the time being tightly

closed, and allowed to remain so for at least twenty-four hours. The woodwork, walls, wooden parts of bedsteads, chairs, etc., should be washed with a solution of bichloride of mercury (the proportions of which have been given above). For bed springs, etc., a solution of carbolic acid should be used, as mercury will injure the metal.

All dishes, spoons, forks, etc., should be thoroughly washed in boiling water after having been used by a consumptive, and such articles should not be used by any other person in the household until they have been thoroughly boiled.

All meats should be thoroughly cooked, and milk sterilized or boiled, if it is thought to be from a diseased source.

The bedding and clothing used by a consumptive should not be included in the family wash; such articles should be washed separately, and be thoroughly boiled during the process of cleansing.

ERNEST WENDE, M. D., *Health Commissioner.*

As to the second point—that is, legislation on the subject—nothing has as yet been accomplished, and it is with the object in view of demonstrating the importance for legislation that I give this paper to-night. A movement of this sort needs the hearty co-operation of every person interested in public health, and until such an ordinance is in existence the spreading of consumption by infected dust from the floors of street cars, public buildings, and similar places will continue.

After a lengthy discussion of this paper, as to the practicability of legislation prohibiting indiscriminate expectoration, the following resolution was submitted to the society, for action, by the chairman, and seconded by Mr. David F. Day, of the Park Commission of the City of Buffalo :

SOCIETY OF NATURAL SCIENCES, LIBRARY BUILDING,  
BUFFALO, October 25, 1895.

*Resolved*, That matters pertaining to public health are within the province of this society as a scientific problem for

discussion. That it has been demonstrated that dust is a means of spreading contagious diseases, and

That this society requests that the various medical societies of the city be invited to unite in arranging some plan by which contagion from expectoration be abated as a well-known nuisance.

That the board of health be requested to give the matter attention and aid in a suitable statement of this source of danger.

Adopted by a unanimous vote.

*References.*

1. Wordin. Tuberculosis: Its Restriction and Prevention. *American Public Health Association Journal.*
2. Bissell. Tubercular Infection in Street Cars. *Buffalo Medical Journal.*
3. Wordin. Tuberculosis: Its Restriction and Prevention. *American Public Health Association Journal.*

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# The New York Medical Journal.

A WEEKLY REVIEW OF MEDICINE.

EDITED BY

FRANK P. FOSTER, M.D.

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